



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
02.11.2000 Bulletin 2000/44

(51) Int Cl.7: **B60K 17/28**

(43) Date of publication A2:
18.08.1999 Bulletin 1999/33

(21) Application number: **99301103.0**

(22) Date of filing: **16.02.1999**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE
 Designated Extension States:
AL LT LV MK RO SI

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(30) Priority: **16.02.1998 US 24025**

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(54) **Power take-off unit having integral pump mounting flange**

(57) A power take-off unit includes a hollow housing 20 having an input shaft 23, an idler shaft 33, and an output shaft 46 supported therein. The input shaft 23 is supported on the housing and carries an input gear 25 thereon that is adapted to be rotatably driven by an engine, transmission, or other source of rotational energy. The idler shaft 33 is supported on the housing and carries an idler gear 35 thereon that meshes with the input gear 25 so as to be rotatably driven thereby. A first end of the output shaft 46 is supported on an inwardly recessed side wall 20e formed integrally with the housing 20. A second end of the output shaft is supported on a bearing cap 43 secured about an opening 42 formed through a second side wall 20c of the housing. A clutch assembly 50 may be provided for selectively connecting the idler gear 35 to the output shaft 46. A mounting flange 51 is formed integrally with the housing 20 about the inwardly recessed side wall 20e and is adapted to facilitate the attachment of the driven accessory directly thereto. The mounting flange 51 may include a flat mounting surface 52 having a pair of apertures 53, 54 formed therethrough. The mounting flange 51 may further include an annular stepped recess 55 extending formed through the inwardly recessed side wall 20e of the housing 20 that functions as a pilot opening to facilitate the mounting of the driven accessory on the housing 20 of the power take-off unit and to insure that the input shaft of the driven accessory is co-axial with the output shaft 46 of the power take-off unit. The housing 20 of the power take-off unit significantly reduces the amount of physical space occupied by the power take-

off unit and the driven accessory, and further enhances the flexibility of positioning the driven accessory relative to the power take-off unit.

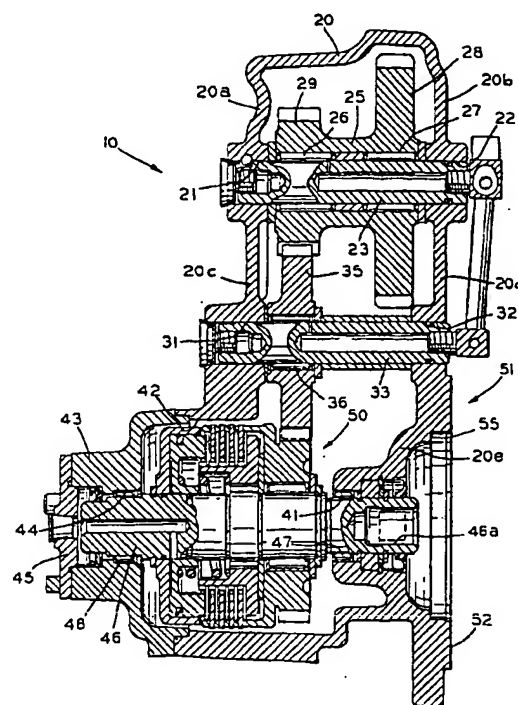


FIG. 4



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 99 30 1103

| DOCUMENTS CONSIDERED TO BE RELEVANT | | | |
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| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int.Cls.) |
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| | | | TECHNICAL FIELDS SEARCHED (Int.Cls.) |
| | | | F16H B60K |
| The present search report has been drawn up for all claims | | | |
| Place of search THE HAGUE | | Date of completion of the search 7 September 2000 | Examiner Topp, S |
| CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document | | | |

EPO FORM 1503 (03/02) (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 99 30 1103

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07-09-2000

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EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82